REMARKS

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration for an allowance is requested in view of the amendments above and the remarks below.

Rejections under 35 U.S.C. § 103

The Examiner has rejected claims 1-5 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Chittipeddi, et al. (U.S. Patent No. 6,472,304) in view of Sakane, et al. (JP 56-017048). Applicants respectfully disagree.

The Examiner agrees with applicants that Chittipeddi does not teach an alloying metal deposit on the metal interconnect layer. However, the Examiner refers to the barrier layer 41 of Chittipeddi as an acceptable intervening layer. Applicants respectfully disagree with the Examiner's assessment. Chittipeddi's metal interconnect layer 13 is buried beneath a number of layers not taught by the present invention: a dielectric layer 14; a "window plug" material, e.g., a TiN layer 21 and a tungsten layer 22; a "metal" plug 23; a dielectric layer 31; a barrier layer 41 of Ta, TaN, Ti, or TiN; a copper strike layer 42; a copper layer 43; a second barrier layer 73 (similar to barrier layer 41); and an aluminum layer 74. Chittipeddi, col. 2, l.54 – col. 3, l.67; Figs. 14, 21 and 22. The barrier layer 41 to which the Examiner refers is far removed from the metal interconnect layer 13. Applicants submit that Chittipeddi makes no suggestion to remove the multitude of layers on top of its metal interconnect layer 13 in order to bond with a metallic wire and an alloying material.

Moreover, the Examiner disregards applicants' position that the aluminum bond layer of Chittipeddi is NOT the alloying layer of the present invention, which it would have to be

in order for claim 1 to read on Chittipeddi. Applicants have submitted previously that the aluminum layer 74 of Chittipeddi is the bond pad itself, *not* the alloying layer. Chittipeddi, col. 3, ll.65-67. In the present invention the alloying material is formed between the interconnect and the metallic wire. Claim 1. Chittipeddi does not teach an alloying material applied over its metal interconnect 13 or over a barrier layer *that is placed directly over the metal interconnect*. Specification, p.8, ll.13-15.

The Examiner further states that Chittipeddi "does not expressly teach depositing on said metallic interconnect comprising alloying metals other than gold wire ... ." Applicants respectfully submit that although this deficiency in Chittipeddi is evident, this is not the only deficiency. Chittipeddi deposits numerous layers on the metallic interconnect *before* the alloying material and the gold wire are ever introduced, which is contrary to the present invention.

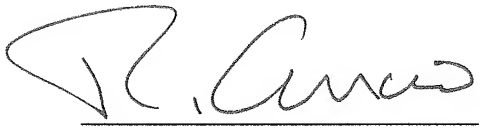
Applicants further submit that the deficiencies of Chittipeddi cannot be cured by the combination of Sakane. In order to combine Chittipeddi with Sakane to realize the present invention, Chittipeddi would have to suggest or disclose removing the multiple layers between the wire and the metal interconnect layer 13. No such suggestion is given. Furthermore, as applicants stated previously, claim 1 specifically states, in pertinent part: "said alloying metal comprising alloying metals *other than* said metallic wire material." Claim 1 (emphasis added). Sakane does not teach this limitation. In effect, Sakane is teaching away from the invention of claim 1, thus the combination fails.

Applicants submit that for the reasons cited above the combination of Chittipeddi and Sakane does not teach, disclose, or suggest the salient features of the present invention

as described in claims 1-5 and 21. It is submitted that the claims remain patentably distinct over this cited prior art.

It is respectfully submitted that the application has now been brought into a condition where allowance of the entire case is proper. Reconsideration and issuance of a notice of allowance are respectfully solicited.

Respectfully submitted,



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